| 102 | 271 | -037 | 7 | | | | | | | | | | | (| Sheet 1 | of 3 | 36) |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------|-----|
| atg Met 1 | agt Ser | aat Asn | aaa Lys | aac Asn 5 | gtc Val | aat Asn | gta Val | agg Arg | aaa Lys 10 | tcg Ser | cag Gln | gaa Glu | ata Ile | aca Thr 15 | toc Pie | 48 | |
| tgc Cys | ttg Leu | ctg Leu | gca Ala 20 | ggt Gly | atc Ile | ctg Leu | atg Met | ttc Phe 25 | atg Met | gca Ala | atg Met | atg Met | gtt Val 30 | gcc Ala | gga Gly | 96 | |
| cgc Arg | gct Ala | gaa Glu 35 | gcg Ala | gga Gly | gtg Val | gcc Ala | tta Leu 40 | ggt Gly | gcg Ala | act Thr | ege Arg | gta Val 45 | att Ile | tat Tyr | ccg Pro | 144 | |
| gca Ala | ggg Gly 50 | caa Gln | aaa Lys | caa Gln | gtg Val | caa Gln 55 | ctt Leu | gcc Ala | gtg Val | aca Thr | aat Asn 60 | aat Asn | gat Asp | gaa Glu | aat Asn | 192 | |
| agt Ser 65 | acc Thr | tat Tyr | tta Leu | att Ile | caa Gln 70 | tca Ser | tgg Trp | gtg Val | gaa Glu | aat Asn 75 | gcc Ala | gat Asp | ggt Gly | gta Val | aag Lys 80 | 240 | |
| gat Asp | ggt Gly | cgt Arg | ttt Phe | atc Ile 85 | gtg Val | acg Thr | cct Pro | cct Pro | ctg Leu 90 | ttt Phe | gcg Ala | atg Met | aag Lys | gga Gly 95 | aaa Lys | 288 | |
| aaa Lys | gag Glu | aat Asn | acc Thr 100 | tta Leu | cgt Arg | att Ile | ctt Leu | gat Asp 105 | gca Ala | aca Thr | aat Asn | aac Asn | caa Gln 110 | ttg Leu | cca Pro | 336 | |
| cag Gln | gac Asp | cgg Arg 115 | gaa Glu | agt Ser | tta Leu | ttc Phe | tgg Trp 120 | atg Met | aac Asn | gtt Val | aaa Lys | gcg Ala 125 | att Ile | ccg Pro | tca Ser | 384 | |
| atg Met | gat Asp 130 | aaa Lys | tca Ser | aaa Lys | ttg Leu | act Thr 135 | gag Glu | aat Asn | acg Thr | cta Leu | cag Gln 140 | ctc Leu | gca Ala | att Ile | atc Ile | 432 | |
| agc Ser 145 | cgc Arg | att Ile | aaa Lys | ctg Leu | tac Tyr 150 | tat Tyr | ege Arg | ccg Pro | gct Ala | aaa Lys 155 | tta Leu | gcg Ala | ttg Leu | cca Pro | P 0 1:0 | 480 | |
| gat Asp | cag Gln | gcc Ala | gca Ala | gaa Glu 165 | aaa Lys | tta Leu | aga Arg | ttt Phe | cgt Arg 170 | cgt Arg | agc Ser | gcg Ala | aat Asn | tct Ser 175 | c g L u | 528 | |
| acg Thr | ctg Leu | att Ile | aac Asn 180 | ccg Pro | aca Thr | ccc Pro | tat Tyr | tac Tyr 185 | ctg Leu | acg Thr | gta Val | aca Thr | gag Glu 190 | ttg Leu | ant Amn | 576 | |
| gcc Ala | gga Gly | acc Thr 195 | cgg Arg | gtt Val | ctt Leu | gaa Glu | aat Asn 200 | gca Ala | ttg Leu | gtg Val | cct Pro | cca Pro 205 | atg Met | ggc Gly | g⊣a G u | 624 | |
| agc Ser | acg Thr 210 | gtt Val | aaa Lys | ttg Leu | cct Pro | tet Ser 215 | gat Asp | gca Ala | gga Gly | agc Ser | aat Asn 220 | att Ile | act Thr | tac Tyr | cda Adg | 672 | |
| aca Thr 225 | ata Ile | aat Asn | gat Asp | tat Tyr | ggc Gly 230 | gca Ala | ctt Leu | acc Thr | ccc Pro | aaa Lys 235 | atg Met | acg Thr | ggc Gly | gta Val | ang Mot 240 | 720 | |
| gaa Glu | taa | | | | | | | | | | | | | | | 726 | |

Figure 1A

Met Ser Asn Lys Asn Val Asn Val Arg Lys Ser Gln Glu Ile Thr Pne 10 Cys Leu Leu Ala Gly Ile Leu Met Phe Met Ala Met Met Val Ala Gly 25 Arg Ala Glu Ala Gly Val Ala Leu Gly Ala Thr Arg Val Ile Tyr Pro 40 Ala Gly Gln Lys Gln Val Gln Leu Ala Val Thr Asn Asn Asp Glu Asn 55 Ser Thr Tyr Leu Ile Gln Ser Trp Val Glu Asn Ala Asp Gly Val Lys 65 70 75 80 Asp Gly Arg Phe Ile Val Thr Pro Pro Leu Phe Ala Met Lys Gly Lys 85 90 Lys Glu Asn Thr Leu Arg Ile Leu Asp Ala Thr Asn Asn Gln Leu Pro 105 Gln Asp Arg Glu Ser Leu Phe Trp Met Asn Val Lys Ala Ile Pro Ser $115 \\ 120 \\ 125$ Met Asp Lys Ser Lys Leu Thr Glu Asn Thr Leu Gln Leu Ala Ile Ile 130 \$135\$Ser Arg Ile Lys Leu Tyr Tyr Arg Pro Ala Lys Leu Ala Leu Pro Pro 145 150 150 160 150 Asp Gln Ala Ala Glu Lys Leu Arg Phe Arg Arg Ser Ala Asn Ser Leu 165 170 175 Thr Leu Ile Asn Pro Thr Pro Tyr Tyr Leu Thr Val Thr Glu Leu Asn 180 185 190 Ala Gly Thr Arg Val Leu Glu Asn Ala Leu Val Pro Pro Met Gly Glu 195 200 205Ser Thr Val Lys Leu Pro Ser Asp Ala Gly Ser Asn Ile Thr Tyr Arg 215 220 Thr Ile Asn Asp Tyr Gly Ala Leu Thr Pro Lys Met Thr Gly Val Met 230 235 Glu

Figure 1B

| 102 | 10271-037 | | | | | | | | | | | | | | (Sheet 3 of 36) | | | | |
|------------|------------------|------------|------------|------------|-------------------|------------------|------------|------------|------------|------------|------------------|------------|------------|------------|-----------------|---|-----|--|--|
| | | | | | acc Thr | | | | | | | | | | | | 48 | | |
| | | | | | ttc Phe 1 | | | | | | | | | | | | 96 | | |
| | | | | | agc Ser | | | | | | | | | | | | 144 | | |
| | | | | | aac Asn | | | | | | | | | | | | 192 | | |
| tgc Cys | cat His 45 | aac Asn | gat Asp | tat Tyr | ccg Pro | gaa Glu 50 | acc Thr | att Ile | aca Thr | gac Asp | tat Tyr 55 | gtc Val | aca Thr | ctg Leu | caa Gln | | 240 | | |
| | | | | | ggc Gly 65 | | | | | | | | | | | | 288 | | |
| | | | | | agc Ser | | | | | | | | | | | | 336 | | |
| | | | | | tcg Ser | | | | | | | | | | | | 384 | | |
| | | | | | agc Ser | | | | | | | | | | | | 432 | | |
| | | | | | ctt Leu | | | | | | | | | | | , | 480 | | |
| | | | | | gtg Val 145 | | | | | | | | | | | | 528 | | |
| | | | | | tgc Cys | | | | | | | | | | | | 576 | | |

Figure 1C

624

ctg ccg gac tac cct ggt tca gtg cca att cct ctt acc gtt tat igt Leu Pro Asp Tyr Pro Gly Ser Val Pro Ile Pro Leu Thr Val Tyr (ys $180\,$

| g A | eg la | aaa Lys | agc Ser 190 | caa Gln | aac Asn | ctg Leu | ggg Gly | tat Tyr 195 | tac Tyr | ctc Leu | tcc Ser | ggc Gly | aca Thr 200 | acc Thr | gca Ala | at //sp | 672 |
|--------|----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-----|
| A. | cg la | ggc Gly 205 | aac Asn | tcg Ser | att Ile | ttc Phe | acc Thr 210 | aat Asn | acc Thr | gcg Ala | tcg Ser | ttt Phe 215 | tca Ser | cct Pro | gca Ala | cag Cln | 720 |
| Ğ | gc 1y 20 | gtc Val | ggc Gly | gta Val | cag Gln | ttg Leu 225 | acg Thr | cgc Arg | aac Asn | ggt Gly | acg Thr 230 | att Ile | att Ile | cca Pro | gcg Ala | aat Asn 235 | 768 |
| a A | ac sn | acg Thr | gta Val | tcg Ser | tta Leu 240 | gga Gly | gca Ala | gta Val | ggg Gly | act Thr 245 | tcg Ser | gcg Ala | gtg Val | agt Ser | ctg Leu 250 | gga Gly | 816 |
| t | ta eu | acg Thr | gca Ala | aat Asn 255 | tat Tyr | gca Ala | cgt Arg | acc Thr | gga Gly 260 | ggg Gly | cag Gln | gtg Val | act Thr | gca Ala 265 | ggg Gly | aat Asn | 864 |
| | | | | | att Ile | | | | | | | | taa | | | | 903 |

Figure 1C (Cont'd)

Met Lys Arg Val Ile Thr Leu Phe Ala Val Leu Leu Met Gly Trp (er -20 -15 Val Asn Ala Trp Ser Phe Ala Cys Lys Thr Ala Asn Gly Thr Ala 11e -1 1 - 5 Pro Ile Gly Gly Ser Ala Asn Val Tyr Val Asn Leu Ala Pro Val 15 20 Val Asn Val Gly Gln Asn Leu Val Val Asp Leu Ser Thr Gln Ile Phe 35 40 Cys His Asn Asp Tyr Pro Glu Thr Ile Thr Asp Tyr Val Thr Leu Gln 45 50 Arg Gly Ser Ala Tyr Gly Gly Val Leu Ser Asn Phe Ser Gly Thr Val Lys Tyr Ser Gly Ser Ser Tyr Pro Phe Pro Thr Thr Ser Glu Thr Pro 80 Arg Val Val Tyr Asn Ser Arg Thr Asp Lys Pro Trp Pro Val Ala Leu 95 100 105 Tyr Leu Thr Pro Val Ser Ser Ala Gly Gly Val Ala Ile Lys Ala Gly 110 115 120Ser Leu Ile Ala Val Leu Ile Leu Arg Gln Thr Asn Asn Tyr Asn Ser 130 135 Asp Asp Phe Gln Phe Val Trp Asn Ile Tyr Ala Asn Asp Val Val 150 140 145 Val Pro Thr Gly Gly Cys Asp Val Ser Ala Arg Asp Val Thr Val Thr 160 165 170Leu Pro Asp Tyr Pro Gly Ser Val Pro Ile Pro Leu Thr Val Tyr Cys $175 \\ 180 \\ 185$ Ala Lys Ser Gln Asn Leu Gly Tyr Tyr Leu Ser Gly Thr Thr Ala Asp 195 Ala Gly Asn Ser Ile Phe Thr Asn Thr Ala Ser Phe Ser Pro Ala Gln 205 210 215 Gly Val Gly Val Gln Leu Thr Arg Asn Gly Thr Ile Ile Pro Ala Fsn 220 225 230 236 225 230 Asn Thr Val Ser Leu Gly Ala Val Gly Thr Ser Ala Val Ser Leu Cly $240 \hspace{1cm} 245 \hspace{1cm} 250 \hspace{1cm}$ 240 Leu Thr Ala Asn Tyr Ala Arg Thr Gly Gly Gln Val Thr Ala Gly 7.sn $255 \hspace{1.5cm} 260 \hspace{1.5cm} 265 \hspace{1.5cm}$ Val Gln Ser Ile Ile Gly Val Thr Phe Val Tyr Gln



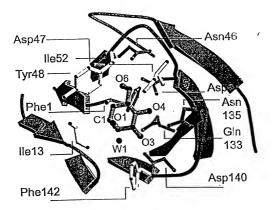


Figure 2 Sheet 6 of 36

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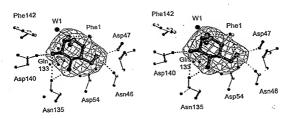




Figure 2 Sheet 7 of 36

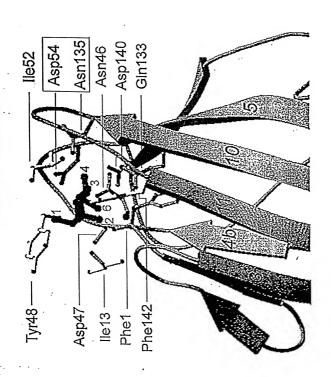


Figure 2 Sheet 8 of 36

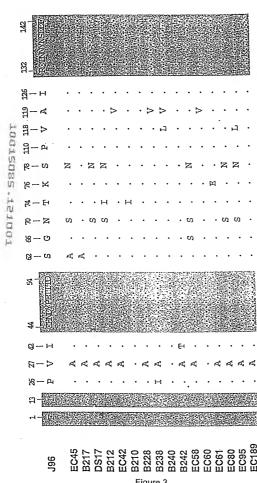


Figure 3 Sheet 9 of 36

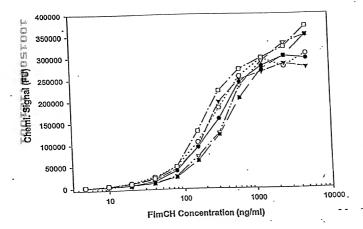


Figure 4 Sheet 10 of 36

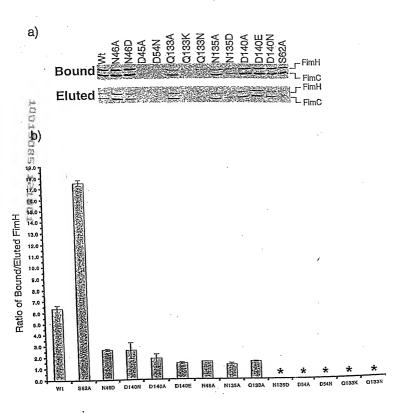


Figure 5 Sheet 11 of 36

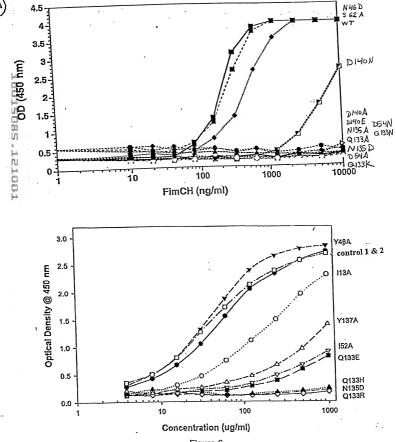
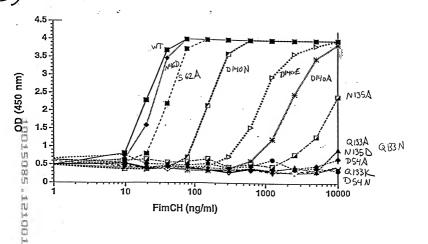
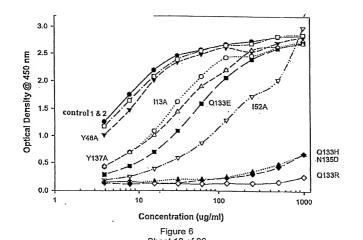


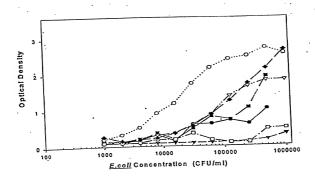
Figure 6











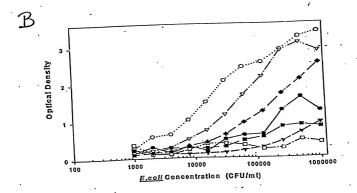
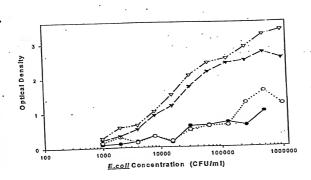


Figure 7 Sheet 14 of 36



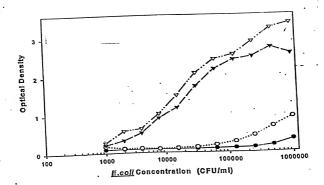


Figure 7 Sheet 15 of 36

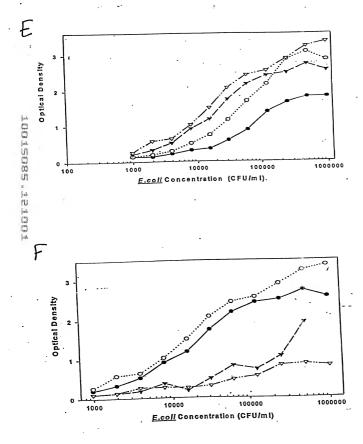
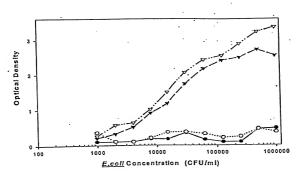


Figure 7 Sheet 16 of 36



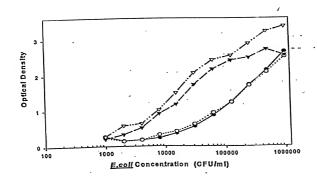


Figure 7 Sheet 17 of 36

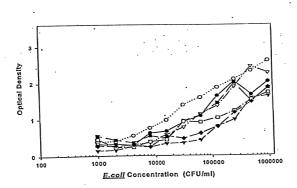
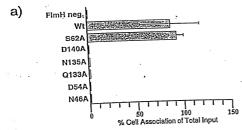
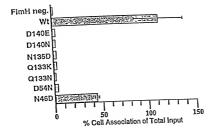


Figure 7 Sheet 18 of 36





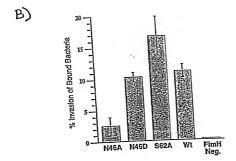


Figure 8 Sheet 19 of 36

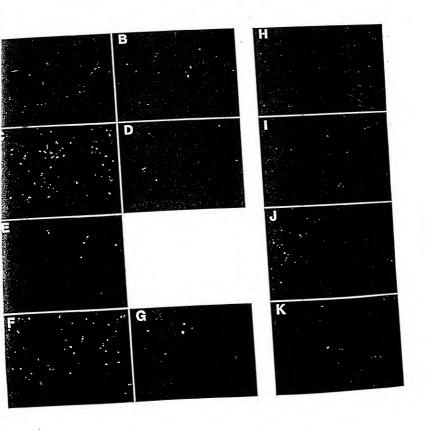
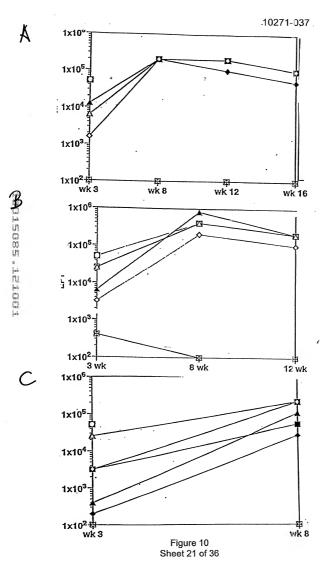


Figure 9 Sheet 20 of 36



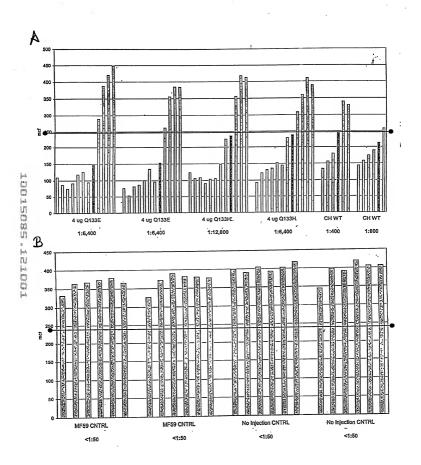
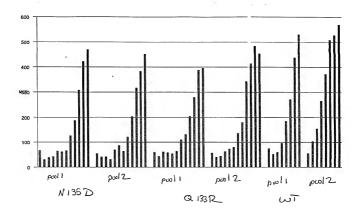


Figure 11 Sheet 22 of 36



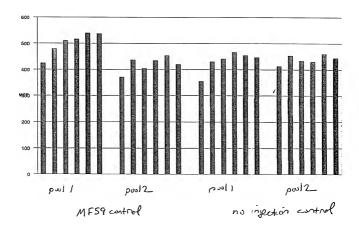


Figure 11 Sheet 23 of 36

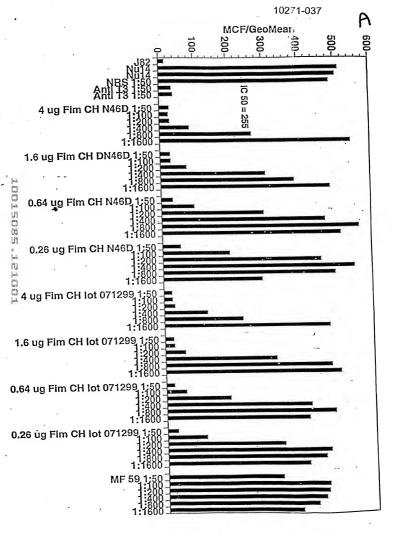


Figure 12 Sheet 24 of 36

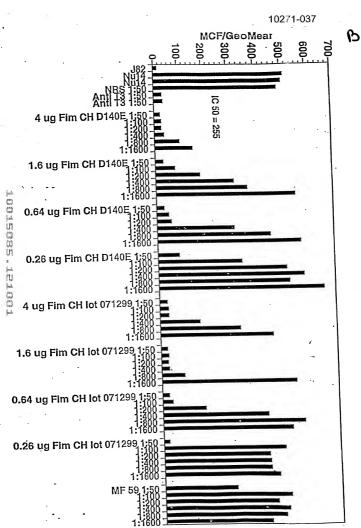


Figure 12 Sheet 25 of 36

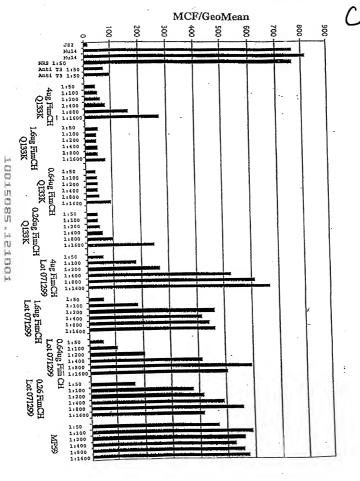


Figure 12 Sheet 26 of 36

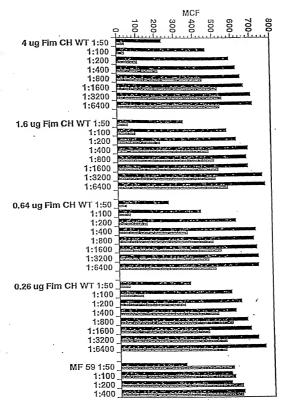


Figure 12 Sheet 27 of 36

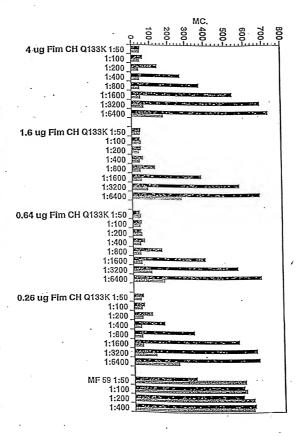


Figure 12 Sheet 28 of 36

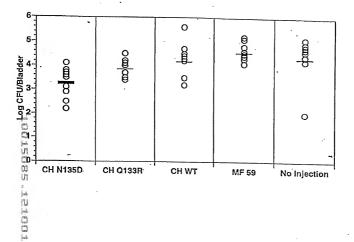


Figure 13 Sheet 29 of 36

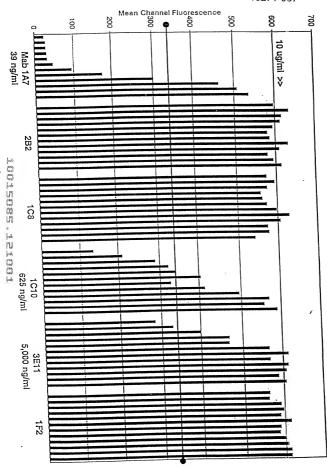


Figure 14 Sheet 30 of 36

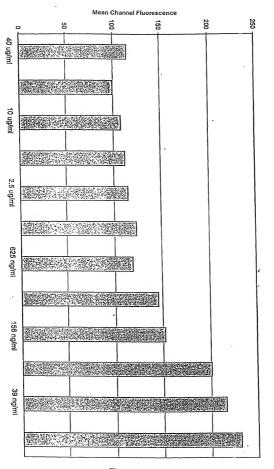


Figure 15 Sheet 31 of 36

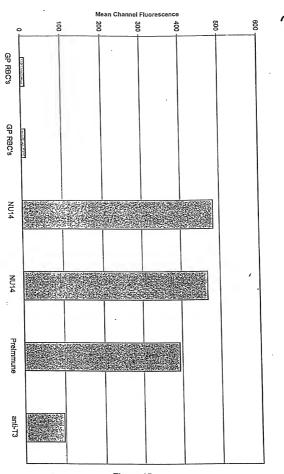


Figure 15 Sheet 32 of 36

Optical Density at 450 nm

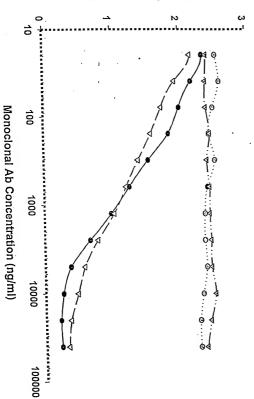


Figure 16 Sheet 33 of 36

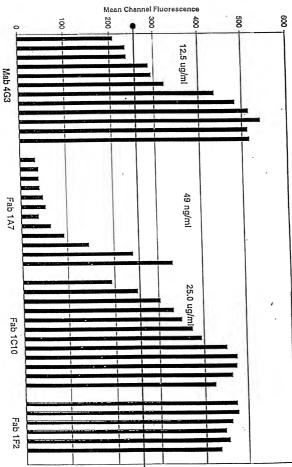


Figure 17 Sheet 34 of 36

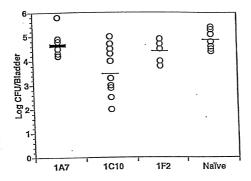


Figure 18 Sheet 35 of 36

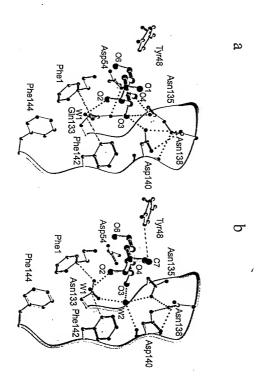


Figure 19 Sheet 36 of 36